



148-026

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT OPERATION

In re application of:

Howard Roy Stuart

Serial No.: 09/584,585

Group Art Unit: 2828

Filed: May 31, 2000

Examiner: Vy, Hung T.

For: STRUCTURE AND METHOD FOR  
PROCESSING OPTICAL ENERGYMail Stop Non-Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450RECEIVED  
JAN 14 2004  
TECHNOLOGY CENTER 2800DECLARATION OF HOWARD ROY STUART

I, Howard Roy Stuart, hereby declare and state that:

1. I am the inventor of the subject matter claimed in the above identified patent application and am fully familiar with the facts and circumstances set forth herein.
2. I have reviewed the Scherer et al. reference cited by the Examiner in the prosecution of the above identified patent application and I believe that I am familiar with the technology discussed therein.
3. On information and belief, Scherer et al. indicates that the light energy processed is emitted from the semiconductor layer, sandwiched between two metal films (see, *inter alia*, Abstract of the Invention, col. 4, lines 27-29).
4. Where the optical energy for processing at the metal layer comprises modes having a strong confinement in the semiconductor, the wavelength of the mode is predominantly defined by the refractive index of the semiconductor when the interaction occurs. As such, the wavelength must be divided by the refractive index of the semiconductor.

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5. On information and belief, Scherer et al. describes processing 986 or 930 nm light (col. 10, lines 13-15) from the semiconductor, which is described generally as being of GaAs or the like (col. 4, lines 40-67), having a refractive index of about 3.5. Therefore, the wavelength of the optical energy being processed at the voids in Scherer et al. is about 280 or 265 nm, respectively ( $986\text{nm}/3.5$  or  $930\text{nm}/3.5$ ).

6. On information and belief, the Scherer et al. reference does not disclose or suggest localized resonance. In contrast, the use of one-dimensional grating in Scherer et al. provides for an interaction with a propagating wave, a teaching away from a localized resonance.

7. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: 1/6/04

  
Howard Roy Stuart